

WE CLAIM:

1. A non-magnetic physical vapor deposition target consisting essentially of Co, silicon, and one phase.

2. The physical vapor deposition target of claim 1 consisting of the Co, silicon and one phase.

3. The physical vapor deposition target of claim 1 comprising a density that is at least 85% of a theoretical maximum density of the material of the target.

4. A non-magnetic physical vapor deposition target consisting essentially of Ni, silicon, and one phase.

5. The physical vapor deposition target of claim 4 consisting of the Ni, silicon and one phase.

6. The physical vapor deposition target of claim 4 comprising a density that is at least 85% of a theoretical maximum density of the material of the target.

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7. A physical vapor deposition target, comprising:
- at least 30 atom percent cobalt;
 - at least 10 atom percent silicon; and
 - one phase comprising cobalt, and not more than 1% of any additional phases comprising cobalt other than said one phase.
8. The physical vapor deposition target of claim 7, wherein the target is non-magnetic.
9. The physical vapor deposition target of claim 7, wherein the target comprises no more than 1% of any additional phases which do not comprise cobalt.
10. The physical vapor deposition target of claim 7 comprising a density that is at least 85% of a theoretical maximum density of the material of the target.
11. The physical vapor deposition target of claim 7 comprising a density that is at least 90% of a theoretical maximum density of the material of the target.
12. The physical vapor deposition target of claim 7 comprising a density that is at least 93% of a theoretical maximum density of the material of the target.

13. The physical vapor deposition target of claim 7 consisting essentially of the cobalt and silicon.

14. The physical vapor deposition target of claim 7 consisting of the cobalt and silicon.

15. The physical vapor deposition target of claim 7 consisting essentially of CoSi_2 .

16. A physical vapor deposition target, comprising:
at least 30 atom percent nickel;
at least 10 atom percent silicon; and
one phase comprising nickel, and not more than 1% of any additional phases comprising nickel other than said one phase.

17. The physical vapor deposition target of claim 16 comprising a density that is at least 85% of a theoretical maximum density of the material of the target.

18. The physical vapor deposition target of claim 16 wherein the target comprises less than 1% of any additional phases which do not comprise nickel.

19. The physical vapor deposition target of claim 16, wherein the target is non-magnetic.

20. The physical vapor deposition target of claim 16 consisting essentially of the Ni and silicon.

21. The physical vapor deposition target of claim 16 consisting of the Ni and silicon.

22. A physical vapor deposition target, comprising:
at least 30 atom percent total of one or more of Co, Ni, Ta, Ti, Pt, Mo;
at least 10 atom percent silicon;
one phase comprising the one or more of Co, Ni, Ta, Ti, Pt, and Mo and not more than 1% of any additional phases comprising the one or more of Co, Ni, Ta, Ti, Pt, and Mo other than said one phase; and
wherein the target is non-magnetic.

23. The physical vapor deposition target of claim 22 comprising a density that is at least 85% of a theoretical maximum density of the material of the target.

24. The physical vapor deposition target of claim 22 wherein the target comprises no more than 1% of any additional phases which do not comprise one or more of Co, Ni, Ta, Ti, Pt and Mo.

25. The physical vapor deposition target of claim 22 comprising at least 30 atom percent of Ta.

26. The physical vapor deposition target of claim 22 comprising at least 30 atom percent of Ti.

27. The physical vapor deposition target of claim 22 comprising at least 30 atom percent of Pt.

28. The physical vapor deposition target of claim 22 comprising at least 30 atom percent of Mo.

29. A physical vapor deposition target, comprising:
at least 20 atom percent total of W;
at least 10 atom percent silicon;
one phase comprising WSi_2 and not more than 1% of any additional phases other than said one phase; and
wherein the target is non-magnetic.

30. The target of claim 29 wherein the W concentration is at least 25 atom percent.

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